Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-202

AH-64E Apache Remanufacture (AH-64E Remanufacture)

As of FY 2017 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President’s Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

AH-64E Apache Remanufacture (AH-64E Remanufacture)

DoD Component

Army

Responsible Office

COL Jeffrey Hager
Project Manager
Builidng 5307
Redstone Arsenal, AL 35898-5000

jeffrey.hager@peoavn.army.mil

Phone: 256-313-4200
Fax: 256-313-4147
DSN Phone: 897-4200
DSN Fax:
Date Assigned: August 9, 2012

References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 16, 2010

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated November 26, 2012

Mission and Description

The AH-64E Apache Remanufacture (AH-64E Remanufacture), hereinafter referred to as AH-64E, is the heavy attack helicopter of the current and future force. It is a twin engine, four-bladed, tandem seat, attack helicopter with 30-millimeter ammunition, 2.75-inch rockets, laser and radio frequency Hellfire missiles. The AH-64E is the Army's network-centric, multi-role weapon system within the Future Modular Force (FMF). It provides the capability to simultaneously conduct (or quickly transition between) close combat, mobile strike, armed reconnaissance, Manned-Unmanned Teaming, security and vertical maneuver missions across the full spectrum of warfare from Stability and Support Operations to Major Combat Operations, when required, in day, night, obscured battlefield and adverse weather conditions. The AH-64E enables the Joint Air/Ground Maneuver Team to dominate the battle space by providing air-ground synergy through real-time Intelligence, Surveillance, and Reconnaissance (ISR) information and responsive precision fires. The AH-64E is linked to Joint and Combined Arms Air/Ground Maneuver Teams via Enhanced Digital Communications, Unmanned Aircraft Systems Data Links and Joint networking waveforms.

The AH-64E is an Apache attack helicopter modified as required to effectively and efficiently integrate the Longbow Apache well into the 21st century by providing improvements to make it relevant in FMF operations. It provides a significantly enhanced warfighting capability over the AH-64A and AH-64D. It is capable of being employed day or night in adverse weather and obscurants, and can effectively engage and destroy advanced threat weapon systems on the air-land battlefield. Tactically, the AH-64E provides significant war fighting advantages over the original AH-64D and multiplies the combat effectiveness of the entire fleet. It will be fully capable of employing the Longbow Fire Control Radar mission kit, the Modernized Target Acquisition Designation System/Modernized Pilot Night Vision System, the Longbow Hellfire missiles, and future improved munitions in addition to the normal complement of AH-64D munitions. Additionally, the AH-64E includes upgraded engines, debuts evolutionary transmission technology and incorporates significant improvements to its main rotor system which increases power and provides substantial performance gains.

The AH-64E is fully network-centric capable with current digitized forces and FMF-equipped forces. This enables interoperability with current and future Tactical Operations Center and Army Battle Command System forces. In addition, this reduces the logistics footprint, enhances its deployability, reduces O&S costs, improves AH-64D flight performance and provides a means to effectively utilize already funded technology insertions. The AH-64E has a fully compatible and rapidly re-configurable open system architecture mission processor design, enabling rapid integration of future communication systems, and minimizing obsolescence.

The AH-64E operates within the future force system-of-systems environment where maximum combat power is delivered to units only in coherent packages of systems with synergistic interdependence. The FMF concept drives the demand for network-centric interdependence and Joint integration across the force to new levels. The AH-64E meets these challenges by providing and integrating Command and Control, ISR, and communications connectivity for attack/reconnaissance aviation within Brigade Combat Teams, Divisions, and Corps.

Executive Summary

Program Highlights Since Last Report:

On August 3, 2015, the Secretary of the Army approved the AH-64E Multi-Year (MY) procurement, which is on schedule to meet a Spring 2017 award. Also, in August 2015, Manned/Unmanned Teaming Expanded capabilities competition was completed and the contract awarded. Meanwhile, Fire Control Radar Maritime Mode Testing occurred from August through September 2015 at Joint Base Little Creek, Virginia.

On September 2015, PM Apache completed fielding to the 2-17 Calvary (3-101 Attack Reconnaissance Battalion (ARB)), the Army's 4th Unit Equipped with the E-model Apaches. PM Apache also assisted and managed transfer of 20 AH-64D aircraft from Germany and Forces Command to a new AH-64 unit, the 1-25 ARB in Fort Wainwright, Alaska. PM Apache identified and provided a materiel solution to support Apache AH-64D and AH-64E helicopters for first time stationing in an arctic environment.

On September 21, 2015, the Joint Staff and USD(AT&L) concurred on the MY procurement request for approval. In October 2015, PM Apache received FY 2015 funding in an Omnibus Reprogramming Action to support procurement of 13 additional AH-64E Remanufacture aircraft. OSD CAPE then visited Boeing Mesa to support MY Independent Government Estimate analysis.

History of Significant Developments Since Program Initiation:

Note: Before its establishment as a stand-alone ACAT IC program, the AH-64E Remanufacture Program was derived from the ACAT ID program, known as Apache Block III.

June 28, 2006: The Apache Block III Program completed a successful Milestone B review with the DAE.

July 10, 2006: The DAE signed an ADM approving Milestone B, authorizing the Apache Block III program to enter System Development and Demonstration (SDD), and designating it as an ACAT ID program.

July 14, 2006: The Apache PM awarded an SDD contract to the Boeing Company to begin the development effort for Apache Block III.

March 7, 2007: A follow-on ADM authorized an LRIP quantity of 59 aircraft and granted the Army authority to procure long-lead items beginning in FY 2009. The APB schedule milestones were established for both the Preliminary Design Review (PDR) and the Critical Design Review (CDR).

April 19, 2007: Milestones for PDR were successfully completed.

January 30, 2008: Milestones for CDR were successfully completed.

November 2009: The Limited User Test was executed successfully.

December 2009: Resource Management Decision (RMD) 802 and RMD 700 directed the PM to increase the total procurement quantity by 56 Apache Block III aircraft as New Build airframes and was included in the FY 2011 PB at a total of $2.6B. This change was implemented to support an increase in the training base capacity and to establish a new heavy combat aviation brigade in the active component. This change was significant due to the fact that the baseline program was fundamentally a Remanufacture production program by design. These additional aircraft procurements would be New Build aircraft at a unit cost significantly higher than the remanufacture unit cost. The increased unit cost, compounded with minor fact-of-life changes throughout the program, caused a Nunn-McCurdy unit cost breach to the APUC, reflected in the December 2009 SAR. The DAE supported a rapid Nunn-McCurdy process in response.

June 1, 2010: Nunn-McCurdy reporting was completed, resulting in an ADM certifying the program progress to Milestone C, and formally separating it into two MDAPs for cost and reporting purposes: the Apache Block IIIA (AB3A) and Apache Block IIIB (AB3B) programs.

September 27, 2010: A successful Milestone C DAB was completed, authorizing LRIP and advance procurement actions for FRP.

October 22, 2010: An LRIP contract was awarded procuring a total of 51 AH-64E Remanufacture aircraft.

October - November 2011: The first Apache AH-64E Remanufacture production delivery occurred on October 24, 2011, with a formal roll-out ceremony held on November 2, 2011.

April 2012: The Initial Operational Test and Evaluation for the AH-64E Remanufacture production aircraft was completed.

June 2012: The Apache Project Management Office (PMO) requested and received approval for the Mission Design Series change for Apache Block III and was formally designated AH-64E Remanufacture. The AB3A and AB3B programs were subsequently renamed the AH-64E Apache Remanufacture and the AH-64E Apache New Build programs, respectively.

August 16, 2012: Another DAB was held, which approved FRP for the AH-64E Apache Remanufacture program and authorized up to 12 LRIP aircraft for the AH-64E Apache New Build program in FY 2013. The DAE issued an ADM approving the designation of the Apache AH-64E Remanufacture and Apache AH-64E New Build programs as ACAT IC after approval of the AH-64E Remanufacture APB.

November 26, 2012: The DAE approved the AH-64E Remanufacture APB.

December 31, 2014: The Apache PMO delivered 83 AH-64E Remanufacture Attack Helicopters of the 690 Approved Acquisition Objective.

June 30, 2014: The United States Government/Boeing Company FRP contract for Lot 3 and Lot 4 was definitized and awarded. This contract supports the remanufacture of 72 AH-64E Apache Helicopters. This production activity supported completion of fielding the second and third units equipped, as well as augmentation of the training fleet.

May 14, 2014: The Army Acquisition Executive (AAE) approved a Justification and Approval (J&A) for sole source procurement for Lot 5 and Lot 6 production contract. A proposal was received September 15, 2014.

August 14, 2014 : AH-64E Remanufacture Capability Version 4 Follow-on Operational Test & Evaluation was successfully concluded on time on at Eglin Air Force Base, Florida. This capability is scheduled to be delivered in 2016.

November 2014: The First Unit Equipped, 1-229 ARB, successfully completed the first operational combat deployment of the AH-64E Remanufacture.

December 23, 2014: The AAE approved the J&A to enter a MY procurement to support production from FY 2017 to FY 2021.

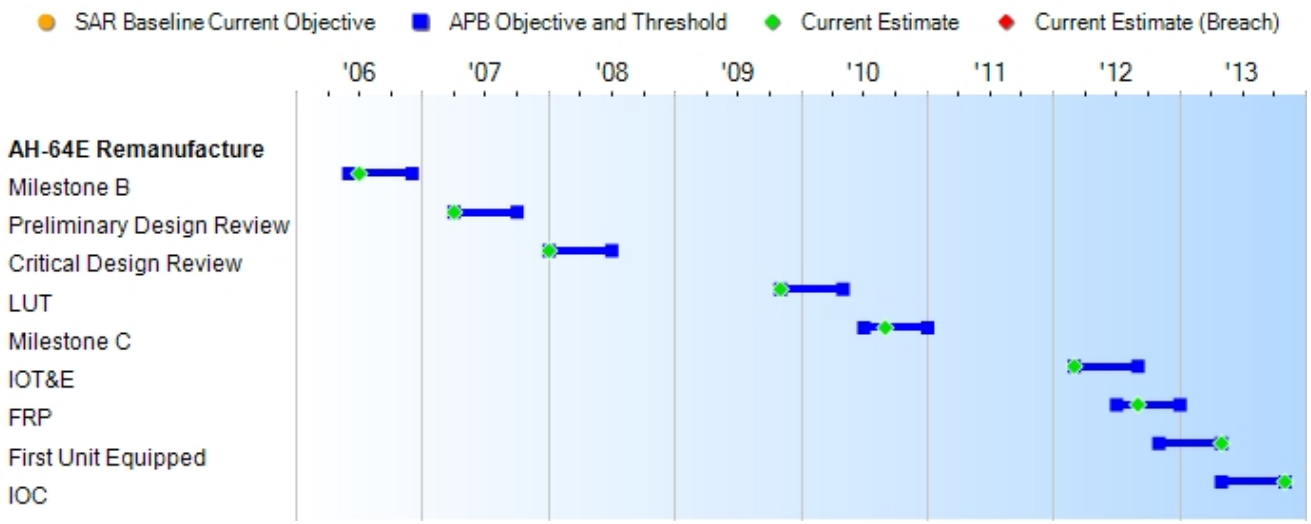
Note: It is important to understand that the Remanufacture and New Build aircraft are procured using the same contracts, built on the same production line, and delivered in the same configuration with the same capabilities.

Threshold Breaches

APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Schedule Events				
Events	**SAR Baseline Production Estimate**	**Current APB Production Objective/Threshold**		**Current Estimate**
Milestone B	Jun 2006	Jun 2006	Dec 2006	Jul 2006
Preliminary Design Review	Apr 2007	Apr 2007	Oct 2007	Apr 2007
Critical Design Review	Jan 2008	Jan 2008	Jul 2008	Jan 2008
LUT	Nov 2009	Nov 2009	May 2010	Nov 2009
Milestone C	Jul 2010	Jul 2010	Jan 2011	Sep 2010
IOT&E	Mar 2012	Mar 2012	Sep 2012	Mar 2012
FRP	Jul 2012	Jul 2012	Jan 2013	Sep 2012
First Unit Equipped	Nov 2012	Nov 2012	May 2013	May 2013
IOC	May 2013	May 2013	Nov 2013	Nov 2013

Change Explanations

None

Notes

AH-64E Remanufacture (formerly known as Apache Block IIIA) schedule encompasses a 12-year EMD phase which began with a risk reduction effort from May 2005 to July 2006. This effort was followed by the current development effort which began in July 2006 and continues through September 2019. Production started in FY 2010 and continues through FY 2024.

Acronyms and Abbreviations

IOT&E - Initial Operational Test and Evaluation
LUT - Limited User Test

Performance

Performance Characteristics				
SAR Baseline Production Estimate	**Current APB Production Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
Net Ready				
Fully support execution of all operational activities.	Fully support execution of all operational activities.	Fully support execution of joint critical operational activities.	Met Threshold	Support execution of all critical operational activities
Performance				
6000' PA, 95 F OGE Hover (lbs/payload)				
4,100	4,100	3,400	Met Threshold	3400
Mission Reliability				
MTBF(M) hrs.				
Lot 1				
22	22	15.3	Met Objective	15.3
Lot 4				
22	22	17	Met Objective	17
MR for 3.5 hr. flight (%)				
85	85	80	Met Objective	80
Survivability				
Safe operation (minutes)				
30	30	30	Met Objective	30
Survive Band IV MANPADS IR Missile Engagement				
IAW JROCM 086-10	IAW JROCM 086-10	IAW JROCM 086-10	Met Objective	IAW JROCM 086-10
Force Protection				
Crewstation armor survivability (mm)				
IAW JROCM 086-10	IAW JROCM 086-10	IAW JROCM 086-10	Met Objective	IAW JROCM 086-10
Crewstation armor barrier survivability (mm)				
IAW JROCM 086-10	IAW JROCM 086-10	IAW JROCM 086-10	Met Objective	IAW JROCM 086-10

Requirements Reference

CPD dated June 1, 2010

Change Explanations

None

Notes

Net Ready KPP compliance is achieved by meeting the information exchange capabilities required by the Integrated Architectures Operational View-1 and is demonstrated by achieving Joint Interoperability Certification, Army Interoperability Certification, and DoD Information Assurance and Accreditation Process accreditation.

Demonstrated Performance is based upon Director, Operational Test and Evaluation assessment of AH-64E Initial Operational Test and Evaluation.

Acronyms and Abbreviations

% - Percent
' - feet
F - Fahrenheit
hr - hour
hrs - hours
IAW - In Accordance With
IR - Infrared
JROCM - Joint Requirements Oversight Council Memorandum
lbs - Pounds
MANPADS - Man Portable Air Defense System
mm - Millimeters
MR - Mission Reliability
MTBF (M) - Mean Time Between Failure (Mission)
OGE - Out of Ground Effect
PA - Pressure Altitude

Track to Budget

RDT&E

Appn		BA	PE
Army	2040	07	0203744A

Project	Name
D17	Aircraft Modifications/Product Improvement Programs

Appn		BA	PE
Army	2040	07	0607135A

Project	Name
ES2	Apache Product Improvement Program

Procurement

Appn		BA	PE
Army	2031	01	0210100A

Line Item	Name
A05111	AH-64 Apache Block IIIA Reman

Appn		BA	PE
Army	2031	02	0210102A

Line Item	Name		
AA6606	AH-64 Mods	(Shared)	(Sunk)

Notes: Prior to FY 2009 and creation of the AH-64E program, this line was shared to reflect AH-64E advance procurement.

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2010 $M			BY 2010 $M	TY $M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	1611.8	1504.2	1654.6	1565.0	1664.7	1557.8	1628.9
Procurement	8856.9	10088.1	11096.9	11093.6	10231.9	12041.7	12968.2
Flyaway	--	--	--	10356.8	--	--	12087.6
Recurring	--	--	--	10318.9	--	--	12043.5
Non Recurring	--	--	--	37.9	--	--	44.1
Support	--	--	--	736.8	--	--	880.6
Other Support	--	--	--	582.3	--	--	696.2
Initial Spares	--	--	--	154.5	--	--	184.4
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	10468.7	11592.3	N/A	12658.6	11896.6	13599.5	14597.1

Confidence Level

Confidence Level of cost estimate for current APB: 50%

This estimate, like all previous Cost Analysis Improvement Group (CAIG) and CAPE estimates, is built upon a product-oriented work breakdown structure; is based on historical actual cost information to the maximum extent possible; and, most importantly, is based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for MDAPs. Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	5	5	5
Procurement	634	634	634
Total	639	639	639

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2017 President's Budget / December 2015 SAR (TY$ M)									
Appropriation	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
RDT&E	1335.7	65.6	66.4	59.8	31.2	32.7	37.5	0.0	1628.9
Procurement	3825.6	1353.4	1066.2	1082.0	1179.3	1123.3	998.7	2339.7	12968.2
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2017 Total	5161.3	1419.0	1132.6	1141.8	1210.5	1156.0	1036.2	2339.7	14597.1
PB 2016 Total	4922.2	1448.3	1140.3	1319.0	1169.6	1165.1	950.9	2652.0	14767.4
Delta	239.1	-29.3	-7.7	-177.2	40.9	-9.1	85.3	-312.3	-170.3

Quantity Summary										
FY 2017 President's Budget / December 2015 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Development	5	0	0	0	0	0	0	0	0	5
Production	0	171	64	52	58	59	57	49	124	634
PB 2017 Total	5	171	64	52	58	59	57	49	124	639
PB 2016 Total	5	158	64	52	68	57	57	46	132	639
Delta	0	13	0	0	-10	2	0	3	-8	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding 2040 | RDT&E | Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2005	--	--	--	--	--	--	57.0
2006	--	--	--	--	--	--	107.1
2007	--	--	--	--	--	--	119.9
2008	--	--	--	--	--	--	184.8
2009	--	--	--	--	--	--	218.2
2010	--	--	--	--	--	--	149.0
2011	--	--	--	--	--	--	90.7
2012	--	--	--	--	--	--	89.8
2013	--	--	--	--	--	--	120.7
2014	--	--	--	--	--	--	112.4
2015	--	--	--	--	--	--	86.1
2016	--	--	--	--	--	--	65.6
2017	--	--	--	--	--	--	66.4
2018	--	--	--	--	--	--	59.8
2019	--	--	--	--	--	--	31.2
2020	--	--	--	--	--	--	32.7
2021	--	--	--	--	--	--	37.5
Subtotal	5	--	--	--	--	--	1628.9

Annual Funding 2040 | RDT&E | Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	BY 2010 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2005	--	--	--	--	--	--	61.7
2006	--	--	--	--	--	--	112.8
2007	--	--	--	--	--	--	123.4
2008	--	--	--	--	--	--	186.6
2009	--	--	--	--	--	--	217.5
2010	--	--	--	--	--	--	146.3
2011	--	--	--	--	--	--	87.4
2012	--	--	--	--	--	--	85.2
2013	--	--	--	--	--	--	112.5
2014	--	--	--	--	--	--	102.8
2015	--	--	--	--	--	--	77.5
2016	--	--	--	--	--	--	58.4
2017	--	--	--	--	--	--	58.1
2018	--	--	--	--	--	--	51.3
2019	--	--	--	--	--	--	26.2
2020	--	--	--	--	--	--	27.0
2021	--	--	--	--	--	--	30.3
Subtotal	5	--	--	--	--	--	1565.0

Annual Funding 2031 | Procurement | Aircraft Procurement, Army							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2009	--	28.4	--	--	28.4	--	28.4
2010	8	230.0	--	--	230.0	--	230.0
2011	16	488.4	--	--	488.4	--	488.4
2012	27	609.3	--	--	609.3	--	609.3
2013	37	593.6	--	--	593.6	--	593.6
2014	35	671.6	--	18.0	689.6	62.9	752.5
2015	48	1034.9	--	2.6	1037.5	85.9	1123.4
2016	64	1256.9	--	2.7	1259.6	93.8	1353.4
2017	52	977.9	--	2.4	980.3	85.9	1066.2
2018	58	1010.9	--	2.5	1013.4	68.6	1082.0
2019	59	1084.6	--	2.5	1087.1	92.2	1179.3
2020	57	1031.4	--	2.6	1034.0	89.3	1123.3
2021	49	903.9	--	2.6	906.5	92.2	998.7
2022	46	821.6	--	2.7	824.3	85.3	909.6
2023	47	811.1	--	2.7	813.8	75.4	889.2
2024	31	489.0	--	2.8	491.8	49.1	540.9
Subtotal	634	12043.5	--	44.1	12087.6	880.6	12968.2

Annual Funding 2031 | Procurement | Aircraft Procurement, Army							
Fiscal Year	Quantity	BY 2010 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2009	--	28.1	--	--	28.1	--	28.1
2010	8	224.0	--	--	224.0	--	224.0
2011	16	467.2	--	--	467.2	--	467.2
2012	27	573.1	--	--	573.1	--	573.1
2013	37	548.5	--	--	548.5	--	548.5
2014	35	611.3	--	16.4	627.7	57.2	684.9
2015	48	927.7	--	2.3	930.0	77.1	1007.1
2016	64	1112.3	--	2.4	1114.7	83.0	1197.7
2017	52	849.2	--	2.1	851.3	74.6	925.9
2018	58	860.8	--	2.1	862.9	58.5	921.4
2019	59	905.5	--	2.1	907.6	76.9	984.5
2020	57	844.2	--	2.1	846.3	73.1	919.4
2021	49	725.3	--	2.1	727.4	74.0	801.4
2022	46	646.3	--	2.1	648.4	67.2	715.6
2023	47	625.6	--	2.1	627.7	58.1	685.8
2024	31	369.8	--	2.1	371.9	37.1	409.0
Subtotal	634	10318.9	--	37.9	10356.8	736.8	11093.6

Cost Quantity Information 2031 | Procurement | Aircraft Procurement, Army		
Fiscal Year	**Quantity**	**End Item Recurring Flyaway (Aligned With Quantity) BY 2010 $M**
2009	--	--
2010	8	184.2
2011	16	382.6
2012	27	531.6
2013	37	641.4
2014	35	556.3
2015	48	707.1
2016	64	1078.3
2017	52	819.3
2018	58	965.2
2019	59	851.4
2020	57	859.0
2021	49	680.5
2022	46	750.7
2023	47	714.3
2024	31	597.0
Subtotal	634	10318.9

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	10/7/2010	10/7/2010
Approved Quantity	51	51
Reference	Milestone C ADM	Milestone C ADM
Start Year	2010	2010
End Year	2013	2013

Foreign Military Sales

None

Nuclear Costs

None

Unit Cost

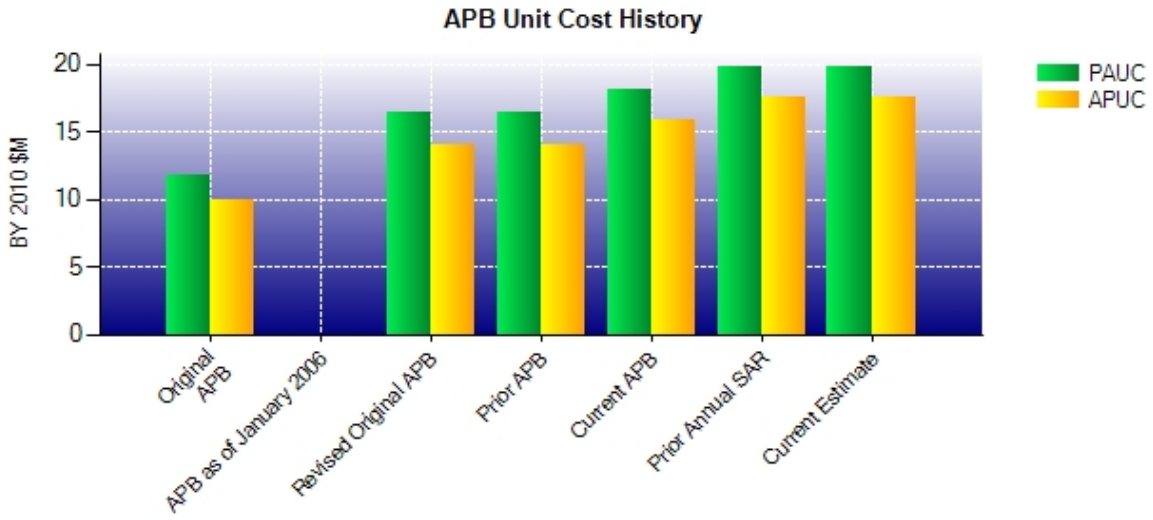
Unit Cost Report

Item	BY 2010 $M Current UCR Baseline (Nov 2012 APB)	BY 2010 $M Current Estimate (Dec 2015 SAR)	% Change
Program Acquisition Unit Cost			
Cost	11592.3	12658.6	
Quantity	639	639	
Unit Cost	18.141	19.810	+9.20
Average Procurement Unit Cost			
Cost	10088.1	11093.6	
Quantity	634	634	
Unit Cost	15.912	17.498	+9.97

Item	BY 2010 $M Revised Original UCR Baseline (Dec 2010 APB)	BY 2010 $M Current Estimate (Dec 2015 SAR)	% Change
Program Acquisition Unit Cost			
Cost	10468.7	12658.6	
Quantity	639	639	
Unit Cost	16.383	19.810	+20.92
Average Procurement Unit Cost			
Cost	8856.9	11093.6	
Quantity	634	634	
Unit Cost	13.970	17.498	+25.25

The Apache program made great strides to reduce the cost of the Remanufacture program from the FY 2016 PB to FY 2017 PB. The incorporation of actuals that depict a downward cost trend allowed an update to the Apache POE cost estimating methodology pulling the program back within the APB threshold for the APUC and total procurement dollars. The Apache program will continue to review and analyze all cost elements and drive efficiency and Better Buying Power Initiatives into the program in order to control costs.

Unit Cost History



Item	Date	BY 2010 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Aug 2006	11.735	9.945	13.445	11.649
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	Dec 2010	16.383	13.970	18.618	16.139
Prior APB	Dec 2010	16.383	13.970	18.618	16.139
Current APB	Nov 2012	18.141	15.912	21.282	18.993
Prior Annual SAR	Dec 2014	19.869	17.600	23.110	20.771
Current Estimate	Dec 2015	19.810	17.498	22.844	20.455

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY $M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
13.445	-0.626	-0.159	0.231	0.000	3.961	0.000	1.766	5.173	18.618

Current SAR Baseline to Current Estimate (TY $M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
18.618	0.111	0.000	-0.150	0.000	5.560	0.000	-1.295	4.226	22.844

Initial SAR Baseline to Current SAR Baseline (TY $M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
11.649	-0.614	-0.056	0.233	0.000	3.147	0.000	1.780	4.490	16.139

Current SAR Baseline to Current Estimate (TY $M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
16.139	0.094	0.000	-0.151	0.000	5.678	0.000	-1.305	4.316	20.455

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	Jun 2006	Jun 2006	Jul 2006
Milestone C	N/A	Apr 2010	Jul 2010	Sep 2010
IOC	N/A	Jan 2013	May 2013	Nov 2013
Total Cost (TY $M)	N/A	8093.9	11896.6	14597.1
Total Quantity	N/A	602	639	639
PAUC	N/A	13.445	18.618	22.844

Cost Variance

Summary TY $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Production Estimate)	1664.7	10231.9	--	11896.6
Previous Changes				
Economic	+14.8	+146.2	--	+161.0
Quantity	--	--	--	--
Schedule	--	-69.6	--	-69.6
Engineering	--	--	--	--
Estimating	-80.7	+3617.6	--	+3536.9
Other	--	--	--	--
Support	--	-757.5	--	-757.5
Subtotal	-65.9	+2936.7	--	+2870.8
Current Changes				
Economic	-3.4	-86.7	--	-90.1
Quantity	--	--	--	--
Schedule	--	-26.2	--	-26.2
Engineering	--	--	--	--
Estimating	+33.5	-17.7	--	+15.8
Other	--	--	--	--
Support	--	-69.8	--	-69.8
Subtotal	+30.1	-200.4	--	-170.3
Total Changes	-35.8	+2736.3	--	+2700.5
CE - Cost Variance	1628.9	12968.2	--	14597.1
CE - Cost & Funding	1628.9	12968.2	--	14597.1

Summary BY 2010 $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Production Estimate)	1611.8	8856.9	--	10468.7
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	-8.9	--	-8.9
Engineering	--	--	--	--
Estimating	-73.4	+2987.8	--	+2914.4
Other	--	--	--	--
Support	--	-677.6	--	-677.6
Subtotal	-73.4	+2301.3	--	+2227.9
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+26.6	-5.3	--	+21.3
Other	--	--	--	--
Support	--	-59.3	--	-59.3
Subtotal	+26.6	-64.6	--	-38.0
Total Changes	-46.8	+2236.7	--	+2189.9
CE - Cost Variance	1565.0	11093.6	--	12658.6
CE - Cost & Funding	1565.0	11093.6	--	12658.6

Previous Estimate: December 2014

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-3.4
Adjustment for current and prior escalation. (Estimating)	+1.8	+1.9
Revised estimate to align with the FY 2017 PB. (Estimating)	+31.0	+38.3
Revised estimate to reflect actuals. (Estimating)	-7.5	-8.2
Revised estimate to reflect application of new outyear inflation indices. (Estimating)	+1.3	+1.5
RDT&E Subtotal	+26.6	+30.1

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-86.7
Adjustment for current and prior escalation. (Estimating)	+18.4	+20.2
Acceleration of procurement buy profile from FY 2018 to FY 2015 due to receipt of Omnibus funding. (Schedule)	0.0	-26.2
Revised estimate to reflect actuals. (Estimating)	-13.1	-14.5
Revised estimate to align with FY 2017 PB. (Estimating)	-56.9	-75.7
Realignment of previously marked flyaway dollars to support. (Estimating)	+25.6	+28.3
Revised estimate to reflect application of new outyear inflation indices. (Estimating)	+20.7	+24.0
Adjustment for current and prior escalation. (Support)	+1.3	+1.7
Decrease in Other Support due to a revision of the training requirements estimate. (Support)	-86.0	-101.3
Increase in Initial Spares due to realignment of previously marked flyaway dollars to support. (Support)	+25.4	+29.8
Procurement Subtotal	-64.6	-200.4

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: AB3 System Development and Demonstration (SDD) and Risk and Reduction
Contractor: The Boeing Company
Contractor Location: 5000 E McDowell Road
Mesa, AZ 85215
Contract Number: W58RGZ-05-C-0001
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: July 14, 2006
Definitization Date: July 14, 2006

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
619.3	N/A	5	920.6	N/A	5	959.2	959.2

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to Government directed changes.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/30/2016)	-6.5	-0.6
Previous Cumulative Variances	-3.4	-4.1
Net Change	-3.1	+3.5

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to this contract having a no-cost Period of Performance (POP) extension to finish First Article Test (FAT) efforts and work on the transmission design.

The favorable net change in the schedule variance is due to this contract having a no-cost POP extension to finish FAT efforts and work on the transmission design.

Notes

The initial revised contract target price represented initial award of Apache Block 3 Risk Reduction and SDD in June 2005. The current contract name, contract type, award, definitization, and current contract target price reflect status with the award of the Apache Block 3 SDD through production Lot 4/6 configuration and associated directed changes to that contract. The contract is now 98% complete.

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: Procurement

Contract Name: FRP REU/UTA Lot 3

Contractor: Longbow LLC

Contractor Location: 5600 W Sand Lake Road
Orlando, FL 32819-8907

Contract Number: W58RGZ-12-C-0049

Contract Type: Firm Fixed Price (FFP)

Award Date: August 30, 2012

Definitization Date: March 31, 2014

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
39.0	N/A	34	72.9	N/A	34	72.9	72.9

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to new requirements being identified and placed on contract.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP) contract.

Contract Identification

Appropriation: Procurement
Contract Name: FRP Lots 3/4
Contractor: The Boeing Company
Contractor Location: 5000 E McDowell Road
Mesa, AZ 85215-9707
Contract Number: W58RGZ-12-C-0055
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: June 29, 2012
Definitization Date: June 27, 2014

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
N/A	246.6	72	1027.9	1043.7	72	1027.9	1027.9

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract award as an Undefinitized Contract Action; the contract is now definitized.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FPIF) contract.

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because an EVM waiver was granted by the Army Acquisition Executive on December 6, 2015 due to the program being a mature production or non-developmental services program.

Contract Identification

Appropriation: Procurement

Contract Name: REU Lots 5/6

Contractor: Longbow LLC

Contractor Location: 5600 W Sand Lake Road
Orlando, FL 32819-8907

Contract Number: W58RGZ-15-C-0078

Contract Type: Firm Fixed Price (FFP)

Award Date: September 03, 2015

Definitization Date:

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
61.8	N/A	67	61.8	N/A	67	61.8	61.8

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP) contract.

General Contract Variance Explanation

Cost variance is not reported for this contract, because an EVM reporting waiver was granted by the Army Acquisition Executive on December 6, 2015 due to the program being a mature production or non-developmental services program.

Notes

This is the first time this contract is being reported.

This is an Undefinitized Contract Action; definitization is planned for 3rd Quarter FY 2016.

The Radar Electronic Unit (REU) Lot 5/6 is an Advance Procurement contract.

Contract Identification

Appropriation: RDT&E

Contract Name: AH 64E, Version 6 (V6) System Development and Demonstration (SDD)

Contractor: The Boeing Company

Contractor Location: 5000 E. McDowell Road
Mesa, AZ 85215

Contract Number: W58RGZ-15-C-0043

Contract Type: Cost Plus Incentive Fee (CPIF)

Award Date: April 15, 2015

Definitization Date:

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
321.8	N/A	0	321.8	N/A	0	321.8	321.8

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date	0.0	--
Previous Cumulative Variances	--	--
Net Change	+0.0	--

Cost and Schedule Variance Explanations

None

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because EVM reporting has not commenced due to the current contract being an Undefinitized Contract Action (UCA) with a planned definitization in 2nd Quarter FY 2016. Target Cost and Target Fee are undefinitized estimates. Upon definitization, a negotiated fee will be recognized on allowable and allocable costs under this UCA.

Notes

This is the first time this contract is being reported.

Contract Identification

Appropriation: Procurement
Contract Name: FRP Lots 5/6
Contractor: The Boeing Company
Contractor Location: 5000 E McDowell Road
Mesa, AZ 85215-9707
Contract Number: W58RGZ-14-C-0018
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: February 19, 2015
Definitization Date:

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
591.2	N/A	35	591.2	N/A	35	591.2	591.2

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FPIF) contract.

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because an EVM was granted by the Army Acquisition Executive on December 6, 2015 due to the program being a mature production or non-developmental services program.

Notes

This is the first time this contract is being reported.

This is an Undefinitized Contract Action; definitization is planned for 3rd Quarter FY 2016.

The Quantity includes six Overseas Contingency Operations-funded AH-64E Remanufacture aircraft.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	5	5	5	100.00%
Production	126	126	634	19.87%
Total Program Quantity Delivered	131	131	639	20.50%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	14597.1	Years Appropriated	12
Expended to Date	3521.5	Percent Years Appropriated	60.00%
Percent Expended	24.12%	Appropriated to Date	6580.3
Total Funding Years	20	Percent Appropriated	45.08%

The above data is current as of March 01, 2016.

Operating and Support Cost

Cost Estimate Details

Date of Estimate: January 14, 2016
Source of Estimate: POE
Quantity to Sustain: 634
Unit of Measure: Aircraft
Service Life per Unit: 20.00 Years
Fiscal Years in Service: FY 2012 - FY 2047

The O&S cost estimate is based upon the OSD CAPE ICE dated August 15, 2012. The estimate was updated on September 17, 2013; February 24, 2014; January 16, 2015; and January 14, 2016 for fact-of-life changes.

The sustainment quantity of 634 aircraft differs from the acquisition quantity of 639 aircraft by five aircraft. Those five aircraft were procured as limited test articles only and do not become part of the operational inventory.

Sustainment Strategy

The AH-64E Apache is maintained by a mix of soldier and civilian maintainers. Assumes the fielding of 634 Remanufactured aircraft, each flying 203.4 hours per year. The Mean Time Between Failure goal for the aircraft system is 22 hours at maturity once the total program reaches 50,000 operational hours.

Antecedent Information

The antecedent to the AH-64E Apache is the AH-64D Longbow. The AH-64D Longbow will be in service until 2046. There are currently 633 AH-64D Longbow aircraft in operation. The AH-64D Longbow will have a total of 14,847 Fleet Years of Operational Tempo. Longbow antecedent data is derived from the Milestone C estimate, updated January 15, 2013.

14,847 Fleet Years x $3,420K per operation hour = $50,776.7M (BY 2010 $M); $58,146.7M (TY)

Annual O&S Costs BY2010 $K		
Cost Element	**AH-64E Remanufacture Average Annual Cost Per Aircraft**	**Longbow Apache (Antecedent) Average Annual Cost Per Aircraft**
Unit-Level Manpower	1538.000	1538.000
Unit Operations	206.000	205.000
Maintenance	938.000	1148.000
Sustaining Support	358.000	355.000
Continuing System Improvements	73.000	73.000
Indirect Support	102.000	101.000
Other	0.000	0.000
Total	3215.000	3420.000

Item	Total O&S Cost $M			
	AH-64E Remanufacture			Longbow Apache (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	38506.0	42356.6	40774.9	50776.7
Then Year	53639.0	N/A	58170.0	N/A

The AH-64E Remanufacture estimate updated to reflect an Extensive Overhaul Program that was added to the Depot Support Plan as of January 14, 2016.

Equation to Translate Annual Cost to Total Cost

634 Helicopters * 20 Years Operational Life * $3,215K Unitized Cost = $40,774.9 (BY 2010 $M)

The discrepancy between the reported cost and the equation is due to rounding.

O&S Cost Variance		
Category	**BY 2010 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2014 SAR	40106.7	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	617.5	Depot Level Overhaul and Depot Level Spares re-estimated.
Cost Data Update	0.0	
Labor Rate	35.5	Increase in labor rates from Prior Year.
Energy Rate	15.2	Updated Cost of Petroleum, Oil, and Lubricants.
Technical Input	0.0	
Other	0.0	
Total Changes	668.2	
Current Estimate	40774.9	

Disposal Estimate Details

Date of Estimate: August 15, 2012

Source of Estimate: CAPE ICE

Disposal/Demilitarization Total Cost (BY 2010 $M): Total costs for disposal of all Aircraft are 46.0

Total Disposal Costs for both the AH-64E Remanufacture and AH-64E New Build aircraft is $46.03M (BY 2010 $M) in accordance with the OSD CAPE ICE dated August 15, 2012.